



## Coat Color Genetics Lesson Plan Part 4

### IDENTIFICATION

INSTRUCTOR: \_\_\_\_\_  
 UNIT TOPIC: Animal Science, Equine Science or Biotechnology  
 LESSON TITLE: Coat Color Genetics: The Reason Behind Paint Horse Color  
 CLASS: \_\_\_\_\_ BEST DATE TO TEACH: \_\_\_\_\_

### OBJECTIVES

- The student will be able to list Paint Horse color patterns after viewing an educational Power Point presentation with 100% accuracy.
- The student will be able to define scientific words related to genetics such as genes, chromosomes, loci, alleles, genetic inheritance, simple dominance, homozygous and heterozygous pairing.
- The student will be able to answer questions about Paint Horse genetics after viewing an educational Power Point presentation.
- The student will be able to problem solve and use deductive reasoning to solve genetic questions posed to them on the Power Point presentation and on a quiz.

### TEACHING MATERIALS AND RESOURCES (What do you need to bring?)

- Power Point Presentation: Coat Color Genetics: The Reason Behind Paint Horse Color
- Instructor's Power Point Outline
- Student's Note Taking Guide
- Butcher paper and markers
- Student's Review Worksheet
- Quiz

### TEACHING PROCEDURES---Preparation, Presentation, Application, Evaluation

#### *Preparation (Interest Approach/Motivator)*

Key Points	Methods
<p><b>Motivator:</b> To get the students' attention instruct them to get in groups to compare physical similarities and differences between themselves with the following questions:</p> <p>What is your eye color?            What is your hair color?            What is your height?            What species are you?            Do you have eyebrows? What color are they?            Are your ear lobes attached to your head or do they hang free?            Do you have fingernails? Are they strong or flimsy?</p> <p><b>Tie in:</b> End the discussion and presentations posing the question: If we are all the same species and we all have eyebrows, eyes, fingernails and hair, how do we explain the differences in eye color, height, hair color and ear lobes? If the students don't know the answer, follow up with: Genetics determine the factors of an individual's make-up.</p> <p><b>Purpose of discussion:</b> Today's topic is Coat Color Genetics: The Reason Behind Paint Horse Coat Color. We will explore how genetics control coat color in Paints similarly to how genetics control our own eye color.</p>	<p>Verbal directions given or written on chalkboard for "ice breaker" activity.</p> <p>Have a recorder for each group who will also present the findings to the class.</p> <p>Verbal presentation.</p> <p>Verbal Discussion and sharing.</p> <p>Introduction to the lesson.</p>

Presentation

Key Points	Methods
<p><b>Hand out:</b> Coat Color Genetics Student's Note Taking Guide</p> <p>Power Point Presentation 4: Coat Color Genetics</p> <ul style="list-style-type: none"><li>• Available at <a href="http://www.apha.com/education">www.apha.com/education</a></li><li>• Upon completion move to the "Let's Review!" section of the Power Point and to the application of the lesson.</li></ul>	<p>Referring to the "Instructor's Outline" present the Power Point Presentation to the students. Allow time for students to respond to the questions posed by the presentation, and to take notes on their "Student's Note Taking Guide."</p>

Application (What will they do with what you taught?)

Key Points	Methods
<p><b>Hand out:</b> Student's Interactive "Let's Review!" Worksheet</p> <p><b>Application of Power Point Presentation:</b> Use the "Let's Review!" worksheet for the students to display what they have learned. Students may work on review questions as a class, in small groups or individually.</p> <p>NOTE: For the last activity on the worksheet, students will need to be in groups to create their own species and genetic code. Provide them with butcher paper and markers to depict their species.</p>	<p>Question/Answer</p> <ul style="list-style-type: none"><li>• Verbal</li><li>• Written</li></ul> <p>Make this a fun activity by having teams present their species and possibly provide awards for the species that is the most creative, prettiest, or craziest.</p>

Evaluation (How do you know they learned it?)

Key Points	Methods
<p><b>Hand out:</b> Quiz</p> <p>Evaluate the students on their knowledge of Coat Color Genetics: The Reason Behind Paint Horse Coat Color.</p>	<p>Multiple choice and essay</p>

**REFERENCES**

[www.apha.com/education](http://www.apha.com/education)

"Coat Color Genetics Educational Guide," American Paint Horse Association, PO Box 961023, Fort Worth, TX, 76161.

\* If you would like additional information or teaching tools, please contact the APHA at (817) 834-2742 or utilize the enclosed Promotional Request form and items will be mailed to you free of charge.